

Appendix 1. Survey Instrument

Dear Adaptive Management Practitioner:

We are contacting you because we are conducting a survey of natural resources managers and others regarding how the concept of “adaptive management” is being integrated into natural resource decision-making in the United States. You are being contacted because you participated in one or more Collaborative Adaptive Management (CAMNet) rendezvous between 2007 and 2011.

As part of our research, we are requesting that you participate in a brief online survey about adaptive management. The survey should only take about 10-15 minutes to complete. Your involvement is voluntary, and you may choose not to participate. Further, you can refuse to answer any of the questions at any time. There are no names or other identifying information like phone numbers, street addresses, or social security numbers associated with this survey. All responses will be kept confidential and aggregated for a statistical analysis and write-up. All survey responses will be kept for one year in a locked filing cabinet and/or on a password-protected computer at the University of New Mexico and then destroyed.

Your feedback is essential to this research. Findings from this research will provide information on how to better integrate adaptive management into natural resources decision-making and will assist CAMNet in their work to better inform and educate natural resource managers and others regarding adaptive management implementation.

If you have any questions about this research project, please feel free to email me at mhbenson@unm.edu. If you have questions regarding your legal rights as a research subject, you may call the UNM Human Research Protections Office at (505) 272-1129.

By completing this survey, you will be agreeing to participate in the above described research study.

Thank you for your time and consideration.

Sincerely,

Melinda Harm Benson
University of New Mexico
Department of Geography

Asa B. Stone
Central New Mexico Community College
Communication, Humanities & Social Sciences Department

1. Please describe your level of experience with adaptive management.

2. There are many definitions of adaptive management being used by natural resource managers, and below a couple of examples. How would you describe your own definition?

National Research Council Definition (from National Research Council. 2004.

Adaptive management [is a decision process that] promotes flexible decision making that can be adjusted in the face of uncertainties as outcomes from management actions and other events become better understood. Careful monitoring of these outcomes both advances scientific understanding and helps adjust policies or operations as part of an iterative learning process. Adaptive management also recognizes the importance of natural variability in contributing to ecological resilience and productivity. It is not a 'trial and error' process, but rather emphasizes learning while doing. Adaptive management does not represent an end in itself, but rather a means to more effective decisions and enhanced benefits. Its true measure is in how well it helps meet environmental, social, and economic goals, increases scientific knowledge, and reduces tensions among stakeholders.

Foundations of Success definition (from Salafsky, Nick, Richard Margoluis, and Kent Redford. 2001. Adaptive Management: A Tool for Conservation Practitioners. Washington, D.C.: Biodiversity Support Program. Adaptive Management).

Adaptive management incorporates research into conservation action. Specifically, it is the integration of design, management, and monitoring to systematically test assumptions in order to adapt and learn. This definition can be expanded as follows: a) Testing assumptions is about systematically trying different actions to achieve a desired outcome. It is not, however, a random trial-and-error process. Instead, it involves first thinking about the situation at your project site, developing a specific set of assumptions about what is occurring and what actions you might be able to use to affect these events. You then implement these actions and monitor the actual results to see how they compare to the ones predicted by your assumptions. The key here is to develop an understanding of not only which actions work and which do not, but also why. b) Adaptation is about taking action to improve your project based on the results of your monitoring. If your project's actions did not

achieve the expected results, it is because either your assumptions were wrong, your actions were poorly executed, the conditions at the project site have changed, your monitoring was faulty — or some combination of these problems. Adaptation involves changing your assumptions and your interventions to respond to the new information obtained through monitoring efforts. c) Learning is about systematically documenting the process that your team has gone through and the results you have achieved. This documentation will help your team avoid making the same mistakes in the future. Furthermore, it will enable other people in the broader conservation community to benefit from your experiences. Other practitioners are eager to learn from your successes and failures so that they can design and manage better projects and avoid some of the hazards and perils you may have encountered. By sharing the information that you have learned from your project, you will help conservation efforts around the world. Our definition of adaptive management includes a framework of specific conditions that warrant an adaptive management approach, steps for the process of adaptive management, and principles for the practice of adaptive management.

Defining Collaborative Adaptive Management (CAMNet Core Advisory Group, February 2010).

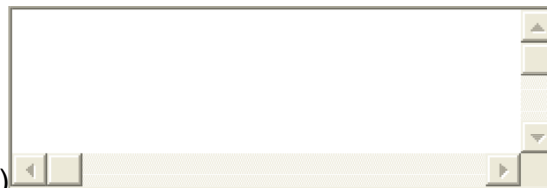
Adaptive management is a systematic management paradigm that assumes natural resource management policies and actions are not static, but are adjusted based on the combination of new scientific and socio-economic information. Management is improved through learning from actions taken on the ecosystems being affected. A collaborative adaptive management approach incorporates and links knowledge and credible science with the experience and values of stakeholders and managers for more effective management decision-making. Public participation in reviewing a program drafted by others is not collaborative adaptive management. Given the inherent ecological and social uncertainty in complex resource management decision-making, adaptive management recognizes that it is not always possible, a priori, to identify the "best" management alternative. Therefore, an experimental approach is warranted, and learning about the system becomes a deliberate goal similar to traditional ecological, economic, or social goals. Integral parts of adaptive management. Since adaptive management is often implemented in complex ecological and social settings, a collaborative process - in which multiple stakeholders participate in learning and developing a shared understanding about management goals, objectives, and decisions - is an essential element of success. Stakeholder collaboration helps inform decision-making, build support for effective implementation, address disputes and enhances the likelihood of sustainable solutions. CAMNet experience

suggests that collaborative adaptive management is best suited for situations where there are questions about the best management approach; opportunities to test lower-level risk, reversible management options; and reasonable decision space. Facilitating appropriate use of collaborative adaptive management also means recognizing when it is not the right approach. Adaptive management is not feasible where alternative outcomes cannot be identified or are not possible. A collaborative approach is not necessary when only one landowner is involved, and may not be necessary if there is agreement about the management action to be taken

3. Please evaluate the following statement: I am often involved in collaborative multi-stakeholder processes involving adaptive management.

- Please evaluate the following statement: I am often involved in collaborative multi-stakeholder processes involving adaptive management. 1. Very much disagree
- 2. Somewhat disagree
- 3. Somewhat agree
- 4. Very much agree
- N. Not sure

Comments (optional)



4. Please evaluate the following statement: A central component of my job is the implementation of adaptive management.

- Please evaluate the following statement: A central component of my job is the implementation of adaptive management. 1. Very much disagree
- 2. Somewhat disagree
- 3. Somewhat agree
- 4. Very much agree
- N. Not sure

Comments (optional)



5. Please evaluate the following statement: In my experience adaptive management efforts often involve collaborations between agencies.

- Please evaluate the following statement: In my experience adaptive management efforts often involve collaborations between agencies. 1. Very much disagree
- 2. Somewhat disagree
- 3. Somewhat agree
- 4. Very much agree
- N. Not sure

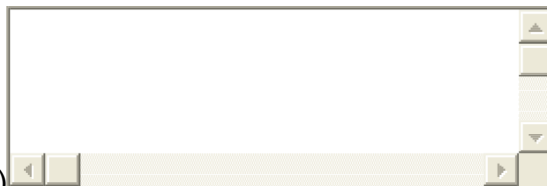
Comments (optional)



6. Please evaluate the following statement: Managers usually take the time to build a conceptual model of the management area before engaging in adaptive management.

- Please evaluate the following statement: Managers usually take the time to build a conceptual model of the management area before engaging in adaptive management. 1. Very much disagree
- 2. Somewhat disagree
- 3. Somewhat agree
- 4. Very much agree
- N. Not sure

Comments (optional)



7. Please evaluate the following statement: Conceptual models that are developed include both human and ecological systems.

- Please evaluate the following statement: Conceptual models that are developed include both human and ecological systems. 1. Very much disagree
- 2. Somewhat disagree
- 3. Somewhat agree
- 4. Very much agree
- N. Not sure

Comments (optional) 

8. Please evaluate the following statement: In general, baseline information and/or data about the relevant system(s) are gathered before adaptive management takes place.

- Please evaluate the following statement: In general, baseline information and/or data about the relevant system(s) are gathered before adaptive management takes place. 1. Very much disagree
- 2. Somewhat disagree
- 3. Somewhat agree
- 4. Very much agree
- N. Not sure

Comments (optional) 

9. Please evaluate the following statement: In my experience, adaptive management efforts involve efforts to engage stakeholders from all affected interests in the adaptive management processes.

- Please evaluate the following statement: In my experience, adaptive management efforts involve efforts to engage stakeholders from all affected interests in the adaptive management processes. 1. Very much disagree

- 2. Somewhat disagree
- 3. Somewhat agree
- 4. Very much agree
- N. Not sure

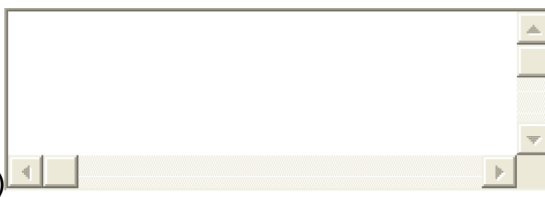
Comments (optional)



10. Please evaluate the following statement: In general, existing legal mandates place management objectives first and place secondary importance on gathering the necessary baseline information.

- Please evaluate the following statement: In general, existing legal mandates place management objectives first and place secondary importance on gathering the necessary baseline information. 1. Very much disagree
- 2. Somewhat disagree
- 3. Somewhat agree
- 4. Very much agree
- N. Not sure

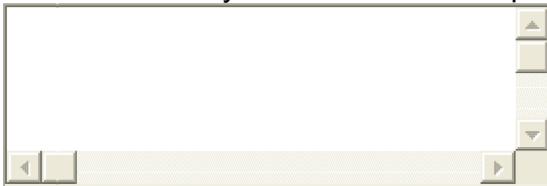
Comments (optional)



11. Please evaluate the following statement: In my experience, broad management plans (e.g., resource management plans) include the flexibility necessary to engage in adaptive management.

- Please evaluate the following statement: In my experience, broad management plans (e.g., resource management plans) include the flexibility necessary to engage in adaptive management. 1. Very much disagree
- 2. Somewhat disagree
- 3. Somewhat agree
- 4. Very much agree
- N. Not sure

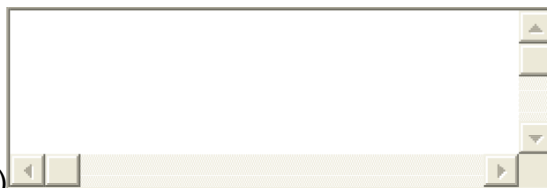
Please enter any comments or examples you would like to share here (optional)



12. Please evaluate the following statement: Laws and other administrative and regulatory requirements constrain efforts to engage in adaptive management.

- Please evaluate the following statement: Laws and other administrative and regulatory requirements constrain efforts to engage in adaptive management. 1. Very much disagree
- 2. Somewhat disagree
- 3. Somewhat agree
- 4. Very much agree
- N. Not sure

Comments (optional)



13. Regarding the question above (Q12), can you list any specific legal requirements that you believe hamper or facilitate adaptive management? Please explain.

Regarding the question above (Q12), can you list any specific legal requirements that you believe hamper or facilitate adaptive management? Please explain. Yes

No



Please explain.

14. Please evaluate the following statement: Monitoring is adequately funded for adaptive management efforts.

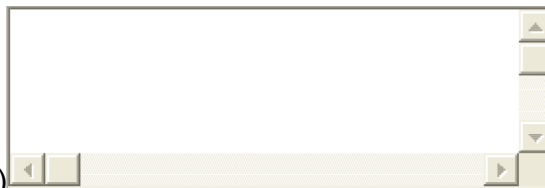
Please evaluate the following statement: Monitoring is adequately funded for adaptive management efforts. 1. Very much disagree

2. Somewhat disagree

3. Somewhat agree

4. Very much agree

N. Not sure



Comments (optional)

15. Please evaluate the following statement: Monitoring and assessment results are integrated into adaptive management decision-making.

Please evaluate the following statement: Monitoring and assessment results are integrated into adaptive management decision-making. 1. Very much disagree

2. Somewhat disagree

3. Somewhat agree

4. Very much agree

N. Not sure

Please enter any comments or example you would like to share here (optional)

16. Please evaluate the following statement: I believe that changes could be made in existing legal requirements to make adaptive management more successful.

- Please evaluate the following statement: I believe that changes could be made in existing legal requirements to make adaptive management more successful. 1. Very much disagree
- 2. Somewhat disagree
- 3. Somewhat agree
- 4. Very much agree
- N. Not sure

Comments (optional)

17. Regarding the question above (Q16), can you suggest specific changes to existing legal requirements that would facilitate adaptive management? Please explain.

Regarding the question above (Q16), can you suggest specific changes to existing legal requirements that would facilitate adaptive management? Please explain.

18. Please evaluate the following statement: In many cases, existing legal mandates (e.g., endangered species protection) make it difficult to engage in adaptive management practices because they require specific management outcomes.

- Please evaluate the following statement: In many cases, existing legal mandates (e.g., endangered species protection) make it difficult to engage in adaptive management practices because they require specific management outcomes. 1. Very much disagree
- 2. Somewhat disagree
- 3. Somewhat agree
- 4. Very much agree
- N. Not sure

Comments (optional)

19. Please evaluate the following statement: It is important to communicate the results of adaptive management experiments to stakeholders.

- Please evaluate the following statement: It is important to communicate the results of adaptive management experiments to stakeholders. 1. Very much disagree
- 2. Somewhat disagree
- 3. Somewhat agree
- 4. Very much agree
- N. Not sure

Please enter any comments or example you would like to share here (optional)

20. Please evaluate the following statement: In my experience, when adaptive management experiments tell us something new, management actions are changed to reflect what is learned.

- Please evaluate the following statement: In my experience, when adaptive management experiments tell us something new, management actions are changed to reflect what is learned. 1. Very much disagree
- 2. Somewhat disagree
- 3. Somewhat agree
- 4. Very much agree
- N. Not sure

Comments (optional)

21. Please provide any additional feedback information here.

Please provide any additional feedback information here.

22. Please select your highest level of education.

Please select your highest level of education.

23. Please select the professional designation that best describes your current status.

Please select the professional designation that best describes your current status.

Please enter a comment (optional).

24. How many years of experience do you have with regard to adaptive management?

How many years of experience do you have with regard to adaptive management?

25. Which CAMNet's annual rendezvous did you attend? (Please check all that apply.)

Which CAMNet's annual rendezvous did you attend? (Please check all that apply.)
2007 Estes Park, Colorado

2008 Homestead, Florida

2009 Kearney, Nebraska

2010 Tucson, Arizona

2011 Keene, New Hampshire

Other (please specify)

26. How would you geographically describe your adaptive management experience?

How would you geographically describe your adaptive management experience?

If appropriate, please elaborate.

Thank you for your participation!